

TAXONOMIC NOTES ON THE DIPTEROUS FAMILY
CHLOROPIDÆ. I¹BY CURTIS W. SABROSKY
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During the course of studies on the classification of a group, there is a gradual accumulation of miscellaneous items, new species, synonymy, etc., which cannot properly be included under the specific titles of other papers, or which are brief additions or corrections to them. The following notes on the Dipterous family Chloropidae are presented herewith, since they are not pertinent to generic revisions now in progress.

Oscinella mallochi Sabrosky. New name.

Equals *O. halterata* Malloch 1913 nec Lamb 1912.

Malloch (1913, Ins. Insc. Menstr., I, p. 47) described *Botanobia* (*Oscinis*) *halterata* from Washington, D. C., and it was recorded as such by the writer in his recent synopsis of the Nearctic species of *Oscinella* and *Madiza* (1936, Annals Ent. Soc. Amer., XXIX, p. 724). However, the use of *Oscinis halterata* by Lamb (1912, Linn. Soc. London, Trans. (Zool.), XV, p. 343; Chloropidæ of the Seychelles Islands) preoccupies the name. I therefore propose *mallochi* for the American species, in honor of the describer, J. R. Malloch, who has contributed so much to the study of the Chloropidæ of the world.

Haplegis fossulata (Loew)

Chlorops fossulata Loew. 1863. Berl. Ent. Ztschr., VII, p. 43. (Cent. III, no. 82.)

Chloropisca atra Curran. 1926. Amer. Mus. Novitates, 220, p. 3. New synonym.

In a recent review of the Nearctic species of *Chloropisca* (1936, Canad. Ent., LXVIII, pp. 170-177), the writer recorded specimens of *C. atra* from Texas, personally compared with the types

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in the American Museum, from Arecibo, Porto Rico. At the time, doubt was expressed of the generic position of the species. Upon seeing one of the specimens, Mr. Malloch very kindly called my attention to the fact that the species is really *Haplegis fossulata* Loew, described from Cuba. The synonymy suggested by Malloch was confirmed from my notes, which I had overlooked, on the type of *fossulata*. The species differs in important respects from the four Palearctic species of *Haplegis* in my collection, and should probably be assigned to some other genus.

The species appears to be quite widely distributed around the Gulf of Mexico, for in addition to the type localities in Cuba and Porto Rico, and my records from Texas, Mr. Malloch wrote me that he has seen specimens from Mexico and the Panama Canal Zone, and Curran has recorded it from Jamaica. Becker (1912, *Chloropidæ* V, p. 148) recorded it from Paraguay, but his description differs in a few particulars.

Chloropisca species

Since the publication of my review of Nearctic *Chloropisca* (*op. cit.*), the known distribution of the several species has been notably extended. The following localities are worthy of record in this connection:

C. appropinqua: Alamogordo, N. Mex.; Cheyenne, Oklah., June 7, 1937; numerous scattered localities in Utah.

C. grata: Gull Lake, Alberta; Hendersonville, N. C. The latter is the first specimen from south of Pennsylvania to be seen by the writer, although a record from Florida is in the literature.

C. obtusa: Appanaug, R. I., June 22, 1912 (C. W. Johnson). The species is so seldom found in collections that any record is worthy of note.

C. parviceps: Swarthmore, Pa., July 18, 1909; Falls Church, Va., June 20, July 12, Aug. 9, and Sept. 7 (N. Banks); Norwich, Vt., July 8, 1908 (C. W. Johnson). The species was previously known to me only from Illinois and Indiana, but these eastern records indicate that it has a much wider distribution. It seems rather uncommon.

C. pulla: A number of additional records have confirmed the writer's view that the species has a wide distribution: Antioch, Calif. (far western record); Narrows, Mt. Desert, Maine (north-

eastern record); Chain Bridge and Plummer's Island, Md.; Natchez, Miss.; Riverton, N. J.; Clouderoft, N. Mex.; Adirondacks, N. Y.; Andrews and Bryson City, N. C.; Dallas, Tex.; Spanish Fork, Ogden, Midvale, and Woodscross, Utah; Falls Church and Rosslyn, Va.

C. pullipes: Pingree Park, Colo.; Wallowa Lake, Ore. (a considerable extension northward of the known range); Blanding, Logan and Monticello, Utah.

C. rubida: Kiger's Island, Ore. (northwestern record); Zion and Logan Canyon and Butlerville, Utah.

Chloropisca annulata (Walker)

Chlorops annulata Walker. 1849. List of the specimens of Dipterous insects in the collection of the British Museum, Part IV, p. 1119. (Martin's Falls, Canada.)

Chloropisca variceps (Loew). 1863. Berl. Ent. Ztschr., VII, p. 46. New synonym.

Chlorops annulata Walker (nec Adams 1904) has long been a species incerta. Osten Sacken's Catalogue (1878) listed it with the note "probably *Chloropisca*-Loew," but Becker (1912) in his monograph of the Nearctic Chloropidæ believed it to be a *Diplo-toxa* or *Anthracophaga*.

According to the type (British Museum), it is a *Chloropisca*, as Loew surmised, and it is the northern species which Loew described as *variceps*. Walker's name has the right of priority, although a change is unfortunate because of the long established use of *variceps* following Loew's clear characterization.

Additional records: Chatham and Douglas Lake, Mich.; High-rolls, N. Mex., May 29, 1902; Trenton, Currant Creek, Roosevelt, Logan and Nephi, Utah.

Chloropisca bistrinata (Walker)

Chlorops bistrinata Walker. 1849. List, etc., Part IV, p. 1120. (Martin's Falls, Canada.)

Chlorops bistrinata; Osten Sacken. 1878. Catalogue, p. 209. (Note by Loew: "apparently *Chlorops* in the narrower sense.")

Chloropisca bistratus; Aldrich. 1905. Catalogue, p. 633.

(Synonym of *C. assimilis* Macq.)

Chloropisca glabra var. *clypeata* Malloch. 1914. Canad. Ent., XLVI, p. 119. New synonym.

Examination of the type of *bistriata* in the British Museum has revealed that it is the form known as *clypeata* Malloch. In reviewing Nearctic *Chloropisca* (*op. cit.*), I discussed the status of *clypeata* and concluded by calling it a variety of *C. glabra*, at least pending further data.

An additional character noted by Malloch will be found useful in separating *bistriata* from *glabra*:

Fore metatarsus black, occasionally yellow at the extreme base.
glabra (Meig.)

Fore metatarsus, and usually part of the second tarsal segment, yellow *bistriata* (Walk.)

Additional records: Ft. Kent, Maine; E. Lansing, Mich.; Fayetteville, N. C.; Holderness, N. H.; Delaware Water Gap, N. J.; Falls Church, Va.; Madison and Wazeka, Wis.

Elachiptera (= *Crassiseta* v. Roser) species with reddish body color.

In studying specimens of *Elachiptera* with reddish body color from scattered localities from Florida to Paraguay, it was impossible to determine species from the generalized descriptions. A recent study of the types² has made possible a better though still incomplete understanding of their identity. In view of the close similarity among the types and the small amount of material available, however, I hesitate to do more than suggest tentative conclusions on their status. Of the many published records, it is impossible to say which species was before the recorder without a reexamination of the actual specimens.

Elachiptera eunota Loew and *E. melampus* Becker (possibly a melanic form of *eunota*) have the thorax chiefly dark reddish, but the more extensive black areas and the entirely black triangle and antennæ will prevent inclusion of these species.

² The examination of types in European museums was made possible by a Grant-in-Aid from the Permanent Science Fund of the American Academy of Arts and Sciences.

KEY TO THE REDDISH SPECIES OF ELACHIPTERA OF THE WESTERN HEMISPHERE

1. Scutellum black, with four long, yellow tubercles; triangle small, not extending beyond the middle of the front.....*punctulata* Becker
Scutellum yellow to reddish, tubercles small or absent; triangle long, approaching the fore margin of the front..... 2
2. Mesonotum thinly pollinose, the pollen somewhat denser on the disk, appearing as a broad stripe between the dorsocentral lines.
pollinosa Sabrosky, n. sp.
Mesonotum shining, not pollinose, except for a narrow band on the posterior slope immediately before the scutellum..... 3
3. Antennal arista slender throughout most of its length, broad and flat only at the base if at all, long haired; only the apical scutellar tubercles evident 4
Arista sword-shaped, equally broad nearly to the apex, with short hairs (cf. note under *attenuata*); South America..... 5
4. Arista slender throughout, only slightly thickened basally; thorax entirely reddish yellow; hind tibiæ yellow.....*flavida* Will.
Arista moderately broad and flat basally, strongly attenuated so that the apical third is quite slender; mesonotum conspicuously black marked; hind tibiæ blackish.....*attenuata* (Adams)
5. Both subapical and apical scutellar tubercles distinct.....*rubida* Beck.
Only the apical tubercles distinct.....*sublineata* (Beck.)

Elachiptera punctulata Becker

Elachiptera nigroscutellata Becker. 1912. Ann. Mus. Nat. Hung., X, p. 80.

Elachiptera punctulata Becker. 1912. *Op. cit.*, X, p. 645.
(Nom. nov., = *nigroscutellata*, preoc.)

No published records are known to me, and the type locality was given only as "North America." The type has been examined, in the Winthem Collection in Vienna. It is quite unlike the other species, resembling *E. costata* Lw. because of the large scutellar tubercles, and it is included here only because of the general color of the body.

***Elachiptera pollinosa* Sabrosky, new species.**

Equals *E. flavida* Duda nec Williston (misident.).

Slender species, agreeing with *attenuata* in general habitus and characteristics. It differs from *attenuata* and the other reddish species by the pollinose mesonotum.

Head yellow, the occiput, triangle and antennæ darker and the cheeks whitish, only the arista, narrow tip of third antennal segment, ocellar tubercle and a V-shaped occipital spot black. Front only slightly wider than an eye,

anteriorly truncate, the sides parallel. Triangle smooth and polished, not pollinose, not touching the eyes at vertex and nearly reaching the anterior margin of the front, the sides very slightly convex; a row of distinct but pale and slender hairs arise in fine punctures on the triangle near each side, and arch over the triangle. Occiput convex behind each eye, but somewhat concave mesally. Eyes sparsely pale pubescent, large, suboval, the posterior border nearly straight, long axis slightly oblique. In profile, the front projects only slightly beyond the eyes, but the face is receding because of the short cheeks. Cheeks narrow, only $\frac{1}{4}$ to $\frac{1}{3}$ the height of the third antennal segment and $\frac{1}{7}$ the height of an eye. Face concave, the median ridge slightly developed on the upper portion. Oral opening, palpi, and proboscis small. Antennæ comparatively large and prominent, porrect; third antennal segment reniform, much broader than long. Arista somewhat thickened and densely long pubescent, but not broadened and flattened. A row of distinct, pale orbital hairs and numerous pale hairs on the front; inner verticals and erect, cruciate ocellar bristles short and inconspicuous; outer verticals and cruciate erect postverticals conspicuous by their length and darker color; vibrissal hair strong.

Thorax and scutellum deep yellow to reddish, the notum darker, a narrow black area at the neck opposite the occipital spot, and in some specimens a narrow blackish stripe laterad of each dorsocentral line. Thorax subshining, the notum and scutellum thinly but distinctly covered with bright yellowish gray pollen, which is somewhat denser between the dorsocentral lines and appears as a broad median stripe in well preserved specimens. The humeri and pleura, except for a small area on the upper part of the mesopleura, polished and not pollinose. A few pale hairs set in fine punctures on the notum and scutellum, with irregular rows of divergent hairs on the median and dorsocentral lines, and a single irregular row of reclinate hairs on the intervening areas. Bristles prominently developed, blackish: 1 + 1 notopleural, 1 postalar, 1 posterior dorsocentral, and 1 apical scutellar. Scutellum flattened on the disk, apically subtruncate, the apical bristles on black, enlarged bases. Subapical bristles inconspicuous, one pair slightly developed. Metanotum orange.

Abdomen of the type not in good condition; in other specimens yellow with black basal corners and a median dorsal black stripe which occupies about $\frac{1}{3}$ of the dorsal aspect of segments three to five, narrower on the first and second. Lateral margins of the tergites infuscated.

Legs yellow, the fore tarsi and the terminal segment or two of the mid and hind tarsi blackened. Sensory area distinct, on hind tibia.

Wings hyaline, yellow-tinted, veins brown. Second and third costal sectors subequal, varying slightly. Veins three and four divergent from the base. Anterior cross-vein near the middle of the discal cell, and only $\frac{1}{2}$ the length of the hind cross-vein. Ultimate sector of fifth vein slightly longer than the penultimate sector of fourth vein.

Length, 1.75–2 mm.

Holotype, ♂, Villarica, Paraguay, August, 1937 (F. Schade). Allotype, Villarica, May, 1937 (Schade). Paratypes: ♀, same data as allotype; ♂, Gualan, Guatemala, Jan. 20, 1905 (J. S. Hine). Type, allotype and parallotype in the author's collection, male paratype in Hine Collection, Ohio State University.

The specimen from Guatemala may be questioned because of the distance from the type locality, but I am unable to separate it from the Paraguayan examples.

One male, Petropolis, Rio de Janeiro, Brazil, May, 1934 (R. Uete) may possibly belong here, with characteristically pollinose mesonotum, but the arista is broad and flat, presenting a much different appearance.

Duda (1930, *Folia Zool. Hydrobiol.*, II, p. 81) described *flavida* Williston as having thickly pollinose mesonotum, but the type of *flavida* (British Museum) has the disk polished and without pollen. The type of *ruficollis* Frey has not been studied, but it was described as possessing a shining thorax and probably equals *sublineata* (Becker).

Elachiptera flavida Williston

Elachiptera flavida Williston. 1896. Ent. Soc. London Trans., 1896, p. 417. (St. Vincent.)

Oscinis mitis Williston. 1896. *Op. cit.*, p. 424. (St. Vincent.) ·New synonym.

Close to *attenuata* in general appearance, having the polished mesonotum without pollen on the disk. The arista is only slightly thickened and flattened toward the base, however, and is quite slender throughout most of its length. The mesonotum and pleura are entirely reddish yellow, with no sign of black striping, and the back of the head is only slightly infuscated centrally. The mesonotum has numerous pale hairs set in fine punctures, with two rows of punctures between the median and each dorso-central row. Legs yellow. In general color, proportions and bristles, it agrees quite well with the description of *E. pollinosa*.

There is considerable doubt of the extent to which this name may be applied. Although there are published records of its occurrence from Chile and Peru to Porto Rico, Cuba, and Florida, I have seen no specimens from these and other regions which entirely agree with the series of four cotypes in the British

Museum, from the Island of St. Vincent. It is possible that *flavida* and *attenuata* are really the same species, widely distributed and variable in the extent of color and the development of the arista, in which case the former name has priority. However, fully matured topotypic specimens of *attenuata* are so distinct in the pattern on the occiput, mesonotum, and hind tibiae that I believe the concept requires recognition.

The four cotypes of *O. mitis* were compared directly with those of *flavida*. Although the aristæ are missing on all specimens of *mitis*, the similarity otherwise is so great that there seems to be no question of the synonymy.

Elachiptera attenuata (Adams)

Crassiseta attenuata Adams. 1908. Jour. N. Y. Ent. Soc., XVI, p. 152. (San Jose de Costa Rica.)

Elachiptera pilosa Duda. 1930. Folia Zool. Hydrobiol., II, p. 81. (San Jose, Costa Rica.) New synonymy.

Similar to *E. pollinosa*, but not pollinose. Fully matured specimens are conspicuously marked with black fore tarsi, distal segment or two of mid and hind tarsi, distal portion of fore tibiae, and the hind tibiae blackish, a black line in each dorso-central position and one on the lower rim of the notopleura. The occiput is broadly blackened on its central area, and usually the area between the black central area and each eye is also infuscated so as to appear as a broad black band reaching from eye to eye. The arista is somewhat broadened and flattened at the base, but strongly attenuated so that the distal third is slender. The abdomen is generally black to black-brown, only the membranous venter and oftentimes a median dorsal spot at the base, orange.

The type of *attenuata* has not been located, although I have examined the collections of Adams, the Hough Collection, and the Snow Collection at the University of Kansas, in which the types of Adams' species were usually deposited. However, the description mentions the distinct features of the arista "rapidly attenuated on outer third," the two sublateral black lines on the mesonotum, and the infuscated tarsi and hind tibiae. These features are also characteristic of the long type series (5 ♂, 3 ♀) of *E. pilosa* Duda (same type locality as *attenuata*) and of other Costa Rican and Central American material which I have seen.

The relative status of *flavida* and *attenuata* is discussed under the former heading.

Distribution: *Costa Rica*: Farm La Caja near San Jose (H. Schmidt), type series of *E. pilosa* (Zool. Mus., Hamburg); 2 ♀, same locality and collector, and 3 ♂, 3 ♀, labeled only "Costa Rica, Knudsen 1920" (Naturhist. Mus., Vienna). *Cuba*: Soledad, Feb. 14, 25, and Mar. 2, 1925 (Mus. Comp. Zool., Harvard Univ.); Paso Real, April 23, 1923, and Marianao, April 15, 1923 (Hine Colln., Ohio State Univ.). *Guatemala*: Los Amates, Jan. 16-20, 1905 (Hine Colln.).

Specimens from Brownsville, Texas, June 11-16, 1933 (Mus. Comp. Zool.), Everglades, Florida, Aug. 11, 1930 (Snow Colln., Kansas Univ.), and Lakeland, Florida, May 6, 1916 (Cornell Univ. Colln.) are recorded here with some doubt. The arista is broadened and flattened nearly to the tip, the occiput is infuscated only centrally, and the mesonotal striping is not distinct; otherwise the specimens agree with *attenuata*.

Published records: specimens have been recorded as *attenuata* from Ormond, Florida (Johnson, 1913, Amer. Mus. Nat. Hist., Bul., XXXII, p. 87), and from Jamaica (Gowdey, 1927, Dept. Agr. Jamaica, Ent. Bul., IV), and as *flavida* from Cuba, Porto Rico, and several localities in Florida. It is probable that some at least of these records may properly be referred to *attenuata*, but the exact status could be determined only by checking the original specimens.

Elachiptera rubida Becker

Elachiptera rubida Becker. 1912. *Op. cit.*, X, p. 179.

The broad arista and the presence of distinct subapical scutellar tubercles seem to be the only tangible characters for separating the species from *attenuata*, although a long series might reveal consistent differences in size and proportions. The female holotype (Taena, Peru, Nov. 27, 1902; Schnuse Colln., Dresden) has a longer and broader arista than in West Indian and Central American material, and the mesonotum seems to be broader in proportion to its length, presenting a stouter appearance.

Elachiptera sublineata (Becker)

Melanochæta sublineata Becker. 1912. *Op. cit.*, X, p. 181.
(Paraguay.)

Melanochæta ruficollis Frey. 1918. Ofvers. F. Vet.-Soc. Förh., LX (A), p. 23. (Rio de Janeiro, Brazil.) New synonym (?).

It seems quite probable that this is really a synonym of slender-bodied *E. attenuata*, which it resembles greatly. The type of *sublineata* (Hung. Nat. Mus., Budapest) has the arista slightly but equally broadened nearly to the tip, although by no means as broad as in *E. rubida*, and the back of the head has only the central infuscation; otherwise it agrees with *attenuata*.

The type of *ruficollis* Frey has not been examined, and I hesitate to place it in synonymy merely from the general description. It was separated from *sublineata*, however, only by the dubious character of the relative extent of black on the fore-legs, abdomen and thorax, and will probably prove to be the same species.

The published records of *sublineata* from Argentina (Malloch, 1934, Dipt. Patagonia & S. Chile, Brit. Mus., VI, p. 419) and Paraguay (Duda, 1930, Konowia, VIII, p. 166) are probably correct.

Ceratobarys eulophus (Loew)

Inasmuch as this species is almost identical in appearance with *Crassiseta flavida*, differing notably by the possession of a distinct hind tibial spur and darker legs, it is appropriate to record the distribution for comparison with that of *flavida*.

The available records are confined to southern United States, ranging from Texas to Florida and up into North Carolina. The type is from Texas, and Malloch's revision of *Hippelates* (1913, U. S. Nat. Mus. Proc., XLVI, p. 263) recorded it from Plano and College Station, Texas, as well as from Georgia. Becker (1912) added a record from Opelousas, La. In addition to these published localities, I have seen specimens from the following:

Florida: Hilliard, Aug. 19, 1930 (R. H. Beamer; on *Hypericum densiflorum*) (Snow Colln., Kansas Univ.); *Georgia*: Prattsburg, July 25, 1930 (Kansas Univ.), and Billy's Island, Okefenokee Swamp, June, 1912 (Cornell Univ.); *Louisiana*: New Orleans, Feb. 23, 1923 (Mus. of Zool., Univ. of Mich.), New Orleans, May 28, 1905 (Hine Colln., Ohio State Univ.), and Opelousas, Mar., 1897 (Hough Colln., Field Mus.); *North Carolina*: Raleigh, late July (N. C. Dept. Agr. Colln.); *South Carolina*: Manning, May 29-30, 1914 (Acad. Nat. Sci. Phila.).

Tricimba Lioy (*Notonaulax* Becker)

The recent discovery of the type of *Tricimba trisulcata* Adams in the Hough Collection (at present at the Field Museum in Chicago) prompted an examination of Nearctic species in the genus, with a determination of the status of this long-lost type.

As Malloch has already noted, the generic synonymy under *Tricimba* is still in confusion, and no attempt will be made to list it here. I may point out, however, that *Hammaspis*, erected by Duda for the single species *spinigera* Malloch, and accepted by Malloch as a subgenus of *Tricimba*, is really an absolute synonym of *Tricimba* Lioy *sensu strictu*. Malloch placed *spinigera* as a synonym of *lineella* Fallén, and while I believe that the two are distinct (*cf.* discussion under *spinigera*), they are closely related and are certainly congeneric. Since *lineella* was long ago (Enderlein, 1911) selected as the genotype of *Tricimba*, the genus *Hammaspis* is an absolute synonym by virtue of a congeneric genotype.

Duda has proposed several generic names for species which were included in *Tricimba sensu lato*, but I shall not attempt to pass upon their scope or validity at this time. His genera *Aphanotrigonum* (for *Tricimba trilineata* Meigen) and *Conioscinella* (including faintly furrowed species) may well include some of our American species, of which there are several having only slightly deepened lines of punctures on the mesonotum. The species which I have considered here under *Tricimba* have three deeply incised furrows on the mesonotum.

Becker (1912), in his monograph of the Nearctic Chloropidæ, found two species of *Tricimba* in North American material, the European *cincta* Meigen and a new species from Washington State, *brunnicollis*. He saw no specimens of *Oscinis trisulcata* Adams, and included it in his key to *Oscinella* as a striped species. In Nearctic material submitted to me for determination, five species are recognized tentatively, pending an opportunity and sufficient material to investigate their specific and varietal relationships. The European and Nearctic species are so similar that one must compare them carefully in analyzing our fauna. Wherever possible, determined Palæartic material was studied; in other cases, the characteristics were drawn from detailed descriptions by European students of the family.

KEY TO THE NEARCTIC SPECIES OF TRICIMBA

1. Notopleural bristles 1+1; four yellow, spine-like marginal scutellar bristles, subequal in length and equidistant from each other, each situated on a small black tubercle slightly ventrad of the margin of the scutellum; one row of hairs between the median and each dorsocentral row.....*spinigera* Malloch²
- Notopleural bristles 1+2; scutellar bristles not as above, the apical scutellars approximated and distinctly longer than the subapicals; several rows of hairs between the median and each dorsocentral row2
2. Humeri, propleura and scutellum with entirely black ground color; scutellum somewhat conical, with distinct apical scutellars and 2-3 pairs of short, indistinct subapicals; all femora and the hind tibiae more or less infuscated in the males, somewhat paler in the females.
- brunnicollis* Becker
- Humeri and propleura black, the scutellum with orange apex; scutellum somewhat conical, with well-developed apical and one pair of scarcely distinct subapical bristles; legs yellow.....*cincta* Meigen
- Humeri and propleura partly or entirely yellow to orange, at most reddish brown; scutellum with yellow apex.....3
3. Humeri and propleura yellow; scutellum conical, broadly yellow at the apex, with well-developed apical but indistinct subapical bristles; legs yellow.....*occidentalis* Sabrosky, new species
- Humeri black above, the lower half and the propleura generally orange, occasionally reddish brown; scutellum broader and rounded apically, with long apical and two to three pairs of long, well-developed subapical bristles; legs yellow, hind femora with a median black band, middle femora with a black spot on the postero-ventral surface.
- trisulcata* Adams

Tricimba spinigera Malloch

Tricimba spinigera Malloch. 1913. Ins. Insc. Menstr., I, p. 60. (D. C., Md.)

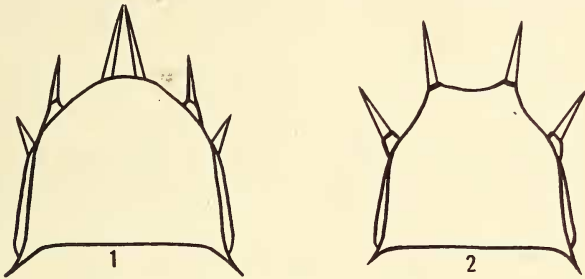
Hammaspis spinigera; Duda. 1930. Folio Zool. Hydrobiol., II, p. 76. Holotype of *Hammaspis*.

Tricimba (Hammaspis) lineella; Malloch. 1934. Dipt. Patagonia & S. Chile, Brit. Mus., VI, fasc. 5, p. 425, 426. *Hammaspis* accepted as subgenus; *spinigera* a synonym of *lineella* Fallén.

² Since this paper was written the writer has seen two specimens, from Isle Royale, Mich., Aug. 3-7, 1936 (C. W. Sabrosky), and Atherton, Mo., May 7, 1916 (C. F. Adams), which have the scutellum as in Fig. 1, though with the first pair of subapical bristles slightly divergent. These may be recorded as typical *lineella* Fallén, may be distinguished from *spinigera* Malloch by the above figures.

After a detailed study of European material, I believe that Malloch's name should be retained for the American species, based upon differences in the scutellum and its bristles. In other particulars the species are almost identical, and are congeneric.

In both species, the marginal scutellar bristles are short, stout, and yellow or whitish-yellow. In *lineella* (cf. Fig. 1), the bases



of the apical scutellars are closely approximated, and the bristles are strongly convergent; there are two pairs of subapical scutellar bristles, of which the posterior pair is parallel and directed posteriorly, and the anterior pair is slightly divergent; the subapicals are even shorter than the short apical bristles. A more striking appearance is presented by the scutellum of *spinigera* (Fig. 2), which bears only one pair each of apical and subapical marginal bristles, subequal in length, equally spaced on the margin, and so directed as to give a radiate appearance to the scutellum. A marked difference will also be noted in the shape of the scutellum, and in its length in proportion to the length of the bristles.

Distribution of *spinigera*: eastern United States, from Maine to Georgia, and west to Kansas and Texas. In addition to the type series, I have seen specimens from the following unrecorded localities:

Georgia: Black Rock Mountain, Rabun County, May 20-25, 1911 (Acad. Nat. Sci. Phila.); *Illinois*: Urbana (U. S. Nat. Mus.); *Indiana*: Lafayette (U. S. Nat. Mus.); *Iowa*: Mt. Pleasant, Feb. 19, 1932 (Iowa Wesleyan Colln.); *Kansas*: Manhattan, Sept. 27, 1933 (on flowers of aster) and Oct. 1, 1933 (Author's Colln.); *Maine*: S. W. Harbor, Sept. 6, 1922 (Boston Soc. Nat.

Hist.); *Maryland*: Plummer's Island, April 8, 1914 (U. S. Nat. Mus.); *Michigan*: Battle Creek (U. S. Nat. Mus.); *Missouri*: Atherton, April 30, 1902 (Ark. Univ. Colln.); *Texas*: Cameron County, Aug. 3, 1928 (Snow Colln., Kansas Univ.); *Virginia*: Falls Church, June 10, Oct. 7 (Mus. Comp. Zool., Harvard Univ.).

Tricimba brunnicollis (Becker)

Notonaulax brunnicollis Becker. 1912. Ann. Mus. Nat. Hung., X, p. 103.

This is the darkest species of the four closely related forms aside from *spinigera*. It would seem to be close to the European *cineta* var. *apicalis* von Röser, with dark scutellum and the femora more or less infuscated. I have seen no specimens of the latter, however, and since Becker recognized *brunnicollis* as a good species, it should be recorded as such, at least for the present.

In the males which I have seen, all femora, and the hind tibiae centrally, are infuscated, whereas in the females (including the types) the legs are somewhat paler and the femora are only slightly infuscated. In good specimens, many of the hairs on the front are set in brown spots slightly darker than the surrounding color.

Distribution: far western, according to present records. *California*: 2 ♂, 5 ♀, Del Norte County, May, 1910 (Deutsches Ent. Mus.); *Oregon*: Josephine County, 1910 (Deut. Ent. Mus.); *Washington*: Copalis, July 25, 1931 (Snow Colln., Kansas Univ.), Friday Harbor, July 2, 1905 (type series, U. S. Nat. Mus.), also a paratype, same locality, July 19, 1905, in Melander's Collection.

The specimens recorded as *brunnicollis* from Kansas by Sabrosky (1935, Amer. Ent. Soc. Trans., LXI, p. 256) do not represent the species, as I recognized when I had an opportunity to study Becker's type.

Tricimba cineta (Meigen)

Becker, in monographing the Nearctic Chloropidæ, recorded specimens from many widely separated localities under the name of Meigen's European species, and the practice has been con-

tinued by later authors (*e.g.*, Aldrich, 1913, Mono Lake, Calif.; Gibson, 1917, Ottawa, Ontario and Aweme, Manitoba; Johnson, 1925, New England List; Leonard, 1926, New York List).

The study of a long series of determined European specimens from four different sources, including Dr. O. Duda who recently monographed the Chloropidæ for Lindner's extensive work on Palæartic Diptera, has failed to assure me that the name can be applied so generally in this country. It is possible that the concepts which I have recognized under *occidentalis* and *trisulcata* may ultimately be found to be races or varieties of *cincta*, but until more definite information is available it seems advisable to give them separate recognition. The distinctive characters are stated in the key, those of *cincta* being taken from determined European material and checked with Duda's detailed redescription.

Specimens from eastern United States differ from typical *cincta* in the shape and proportion of the scutellum, the development of scutellar bristles, and somewhat in color. Fortunately, no new name is required for the concept, since I find from the type that *Oscinis trisulcata* Adams is this eastern species. Likewise, some western specimens differ so conspicuously in the color of the humeri and propleura that it is necessary to separate them from typical *cincta* (*cf. occidentalis*). A few western specimens agree well with European material of *cincta*, and are therefore recorded as such.

Distribution of *cincta*: western. *British Columbia*: Goldstream to Downie Creek, Selkirk Mts., Aug. 7-11, 1905 (Cornell Univ. Colln.); *California*: Berkeley Hills, Alameda County, April 20, 1908 (Acad. Nat. Sci. Phila.).

The status of published records of *cincta* is uncertain. I have checked the specimens upon which Johnson based his New England records, and they can be referred to *trisulcata* Adams. It is probable that all of the eastern records refer to Adams' species, but the proper placing of the western records is unknown to me at present.

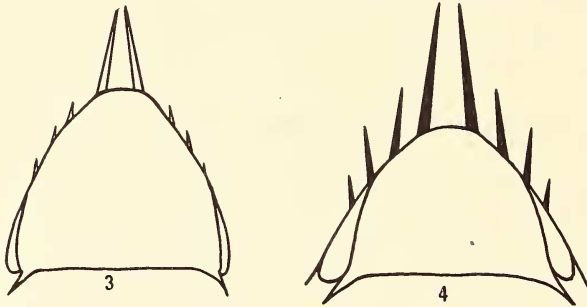
***Tricimba occidentalis* Sabrosky, new species.**

Close to *Tricimba cincta* Meigen, but characterized by conspicuously yellow humeri and propleura, and pale brown to yellow thoracic bristles.

♀. Head yellow, the back of the head and the vertical triangle black, gray

dusted; clypeus black; all bristles of the head pale yellow, short and inconspicuous; eyes with minute pale pubescence; front wider than an eye, brown on the posterior third, thickly beset with short, pale yellow hairs; antennæ brown at the base of the arista; face slightly concave in profile; height of the cheeks slightly less than the breadth of the third antennal segment and about one-fourth the height of the eyes.

Mesonotum black, densely gray dusted, with numerous short, pale hairs and pale bristles; notopleurals 1 + 2, 1 postalar, 1 posterior dorsocentral; the three impressed lines of punctures as in *cincta*; humeri, propleura, and the apex of the scutellum broadly, deep yellow, the posterior portion of the notopleura also yellowish; remainder of the pleura black, polished below, the mesopleura and pteropleura gray pollinose; metanotum shining black; scutellum (Fig. 3) rather conical, long and narrow, the length subequal to



the basal breadth, with a pair of distinct, well-developed apical scutellar bristles and several pairs of subapicals which are scarcely distinguishable from the discal hairs.

Abdomen dark brown above, the membranous venter and the two basal segments orange except for a spot in each anterior corner of the second segment.

Wings as in *cincta*, the second costal sector approximately twice as long as the third sector, third and fourth veins subparallel, slightly diverging near the apex of the wing, the outer cross-vein oblique. Halteres yellow.

Legs, including all coxæ, entirely pale yellow; sensory area on hind tibiae elongate.

Length, 1.5-2 mm.

Holotype, ♀, Giant Forest, California, July 28, 1929 (R. H. Beamer). In the Snow Collection, University of Kansas. Paratypes, ♀, two, Orange County, Calif., July 14, 1929 (P. W. Oman); one, Palo Alto, Calif., Oct. 20, 1894 (R. W. Doane); one, Hood River, Oregon, July, 1931 (R. H. Beamer). In the University of Kansas and the Author's Collection.

I have seen no specimens of the European *humeralis* Loew, but from the description it would seem to be similar in general appearance to both *occidentalis* and *trisulcata*, having the humeri, part of the notopleura, and the apex of the scutellum yellow. *Humeralis* differs from both species, however, in that the cheeks are as broad or broader than the third antennal segment, and the triangle has a glabrous, shining black spot on the triangle anterior to the median ocellus. The relationship to *cincta* var. *flavipila* Duda is not clear, but if *flavipila* differs from *cincta* only by the pale bristles, as described, then *occidentalis* is still distinct because of the yellow humeri and propleura.

Tricimba trisulcata (Adams)

Oscinis trisulcata Adams. 1905. Ent. News, XVI, p. 111.

Oscinella trisulcata; Becker. 1912. Ann. Mus. Nat. Hung., X, p. 118.

Tricimba trisulcata; Malloch. 1913. Canad. Ent., XLV, p. 178.

Notonaulax cincta; Johnson. 1925. List of the Diptera of New England.

The holotype of *trisulcata*, which I have before me, was found in material received for study from the Hough Collection, at present in the Field Museum in Chicago. It is a *Tricimba*, close to *cincta* Meigen. As noted under *cincta*, and in the key, there are some differences which appear to warrant specific recognition. Adams' name is available and should therefore be used until the question can be settled satisfactorily. The paler humeri and propleura, the broadly rounded scutellum (Fig. 4), the longer apical and the two to three pairs of long subapical scutellar bristles, and the distinct pattern on the legs (at least in matured specimens), distinguish the species from European material of *cincta* which I have examined.

The type is obviously somewhat teneral, and it is therefore difficult to detail the characteristics from this specimen alone. The characters used in the key are evident, however, and there is no difficulty in associating eastern material with it. The abdomen is broken making it impossible to determine the sex.

Distribution: eastern. *Kansas*: Abilene, Aug. 30, 1932

(Author's Colln.); *Louisiana*: Opelousas, March, 1897 (type, Hough Colln.); *Maryland*: long series, Plummer's Island, May 14, 26, June 8, Aug. 25, 1914, all but one labeled "At light" (U. S. Nat. Mus.); *Massachusetts*: Holliston, Sept. 8 (Mus. Comp. Zool.), Brookline, Sept. 24, Dedham, Sept. 4, and Auburn-dale, June 28, the latter two recorded by Johnson (1925) as *Notonaulax cincta* (Boston Soc. Nat. Hist.); *New Hampshire*: Mt. Monadnock, June 22, 1917, recorded by Johnson as *N. cincta* (Boston Soc. Nat. Hist.); *South Dakota*: Elk Point, June 19, 1924 (S. Dak. State Coll.); *Virginia*: Falls Church, May 14 and Aug. 28 (N. Banks Colln., Mus. Comp. Zool.), Rosslyn, July 11, 1913 (U. S. Nat. Mus.). A lone specimen from Batesburg, S. C., Aug. 24, 1930 (R. H. Beamer) (Snow Colln., Kansas Univ.) differs slightly, and is recorded here with some doubt.

Tricimba seychellensis Sabrosky. New name.

Equals *Tricimba trisulcata* Lamb (*Notonaulax*), preoccupied.
Notonaulax trisulcata Lamb. 1912. Linn. Soc. Zool., Trans., XV, p. 338.

I find that the use of *trisulcata* Adams (1905) in *Tricimba* preoccupies Lamb's use of the name for a species from the Seychelles Islands in the Indian Ocean. I therefore propose *seychellensis* to replace the homonym.